



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Paul Mills
Serial No. : 09/728,395
Filed : December 1, 2000
Title : PACKAGING CONTROL WITH TRANSLATION OF COMMAND PROTOCOLS

Art Unit : 3721
Examiner : John Roger Paradiso

Mail Stop Appeal Brief - Patents

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

BRIEF ON APPEAL

(1) Real Party in Interest

Markem Technologies Limited, a Great Britain corporation and the assignee of this application, is the real party in interest.

(2) Related Appeals and Interferences

There are no related appeals or interferences.

(3) Status of Claims

Claims 1-13 are pending in this application of which claim 1 is independent. All of the claims have been finally rejected and all claims have been appealed.

(4) Status of Amendments

The claims have not been amended subsequent to final rejection. There are no unentered amendments.

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(5) Summary of Claimed Subject Matter

a. Background

Packaging systems for marking, conveying and collecting packages into packaged units typically include a data bus (which can be wireless in one example) to which a control computer and the individual items of equipment are connected at respective locations, around a building or buildings. Because each item of equipment may require command signals from the control computer according to a protocol which may be specific to a particular equipment manufacturer, or even to a particular equipment model, it has been necessary for the control computer to be configured, with the loading of software drivers and the like, so as to be able to control each of the various items of equipment.

Once set up, the control computer controls each of the items of equipment by issuing to the data bus, command signals according to the protocol demanded by the particular item of equipment to be controlled. However, setting up and configuring a control computer can be technologically complex. Hence if at a future time, an item of equipment is replaced with an item which requires a different command protocol, the control computer requires reconfiguration which can impact other control processes, or lead to instabilities in the system. In other words, it is undesirable to have to reconfigure the control computer, so that wherever possible, it has been preferable to replace an item of equipment, with an identical item which would operate according to the identical command protocol as the item to be replaced.

b. Appellant's Invention

Claim 1, the only independent claim, is directed to a packaging system for packing a number of individual articles into packs and for collecting the packs into a packaged unit. The packaging system permits different items of equipment, from the same or different manufacturers, to be controlled from a control computer, without requiring reprogramming or reconfiguring of the computer in the event that any item of equipment is exchanged with an alternative item. After the control computer is initially configured to issue command signals to the data bus according to a common protocol i.e., the same command protocol is used for all of the items of equipment to be controlled, there is no requirement to reconfigure the control computer merely because any item of equipment is replaced.

This is achieved in the instant invention by providing local (with respect to the items of equipment) translators which convert the command signals issued to the data bus using the common protocol, to command signals suitable for controlling an addressed item of equipment. So only the translator may need to be configured in the event that an item of equipment is replaced.

Accordingly, it is unnecessary to reconfigure the control computer when replacing any item of the packaging system with anything different than the item being replaced. Thus the integrity and stability of the control computer and command system generally may be preserved. As such, faulty equipment in the packaging system no longer need be replaced by identical equipment to avoid the burden of reconfiguring the control computer. For example, if a particular item of equipment operates with reduced effectiveness in a particular packaging environment, or is prone to breaking down, a manager will be able to replace the item with a different model, or indeed another supplier's equipment, without having to consider the implications of reconfiguring the control computer.

Claim 1 recites elements in means plus function format. The first, second and third marking means correspond to at least one of continuous ink jet type printers 14, 15, a thermal transfer type printer 16, a labeling machine 24 which marks by ablating the surface of the cartons or an ink jet carton/case cooler, laser printers 21, 22, a label printer such as a thermal printer or any other type of printer which is preferably able to print directly on the cartons. The packing means corresponds to an automated packing machine for packaging individual packets into packs, e.g., cardboard cartoons. (Specification, p. 5, line 16-18).

The first and second conveying means corresponds to first and second conveyors 9, 8, respectively. (Specification, p. 5, lines 11-15, p. 6, lines 1-4, lines 21-23 and Fig. 1).

The means to collect the plurality of packs into a packaging unit corresponds to a palletiser 30 for collecting and placing cartons on a pallet, and stacking the cartons appropriately. The palletiser 30 can include integral or separate wrapping means (Specification, p. 6, line 1-7 and Fig. 1).

The connecting means corresponds to a serial connection which includes means to translate the data bus commands addressed to the associated connected component into a

command protocol specific to the individual connected component for operation according to the control algorithm. (Specification, p. 7, lines 10-26 and Fig. 1).

The control means corresponds to a computer to issue data bus commands addressed to individual connected components appropriate to make the individual connected components perform productive functions and coordinating the packaging system to pack, mark, convey, and collect, for example, in response to a control algorithm. The control means can issue commands using HTTP, TCP/IP, ITX, or FTP protocol. The control means can include a database of connected components so that command protocols appropriate to the functionality of the connected components are sent to the components. (Specification, p. 4, lines 10-14, p. 8, lines 4-16 and Fig. 1).

The means to translate data bus commands corresponds to at least one of a control circuit within the connected equipment or a translator which recognizes the data bus commands and translates such commands into a command protocol appropriate to the connected component. (Specification at p. 7, lines 10-20 and Fig. 1).

Dependent claims 4-6 and 8 also recite elements in means plus function format. The means to weight articles of claim 4 corresponds to an article weight station 11 (Specification, p. 4, line 28 to p. 5, line 2 and Fig. 1). The means to size articles of claim 5 corresponds to components connected to the data base 40 to size articles, so that information dependent upon the analysis may be printed on the articles and/or their packs, and/or the packaging unit. (Specification, p. 8, line 29 to p. 9, line 5). The means to count elements of claim 6 corresponds to components connected to the data base to count articles, so that information dependent upon the analysis may be printed on the articles and/or their packs, and/or the packaging unit. (Specification, p. 8, line 29 to p. 9, line 5). The means to wrap the collected articles of claim 8 corresponds to a palletiser 30 and/or a separate wrapping means 31 (Specification, p. 6, lines 4-10 and Fig. 1).

Specific features of various embodiments are recited in the remaining rejected dependent claims.

(6) Grounds of Rejection

Claims 1, 2 and 6 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Komiya (U.S. Patent. No. 6,155,025). Claims 3-5 and 7-13 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Komiya.

(7) Argument

The subject matter of claims 1-13 is neither anticipated by nor would have been obvious over Komiya.

a. The subject matter of claims 1, 2 and 6 is not anticipated by Komiya

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631 (Fed. Cir. 1987). Even if the reference does not explicitly disclose every element, “[i]t is well settled that a prior art reference may anticipate when the claim limitations not expressly found in that reference are nonetheless inherent in it. Under the principles of inherency, if the prior art reference functions in accordance with, or includes the claimed limitations, it anticipates.” *In re Cruciferous Sprout Litig.*, 301 F.3d 1343 (Fed. Cir. 2002).

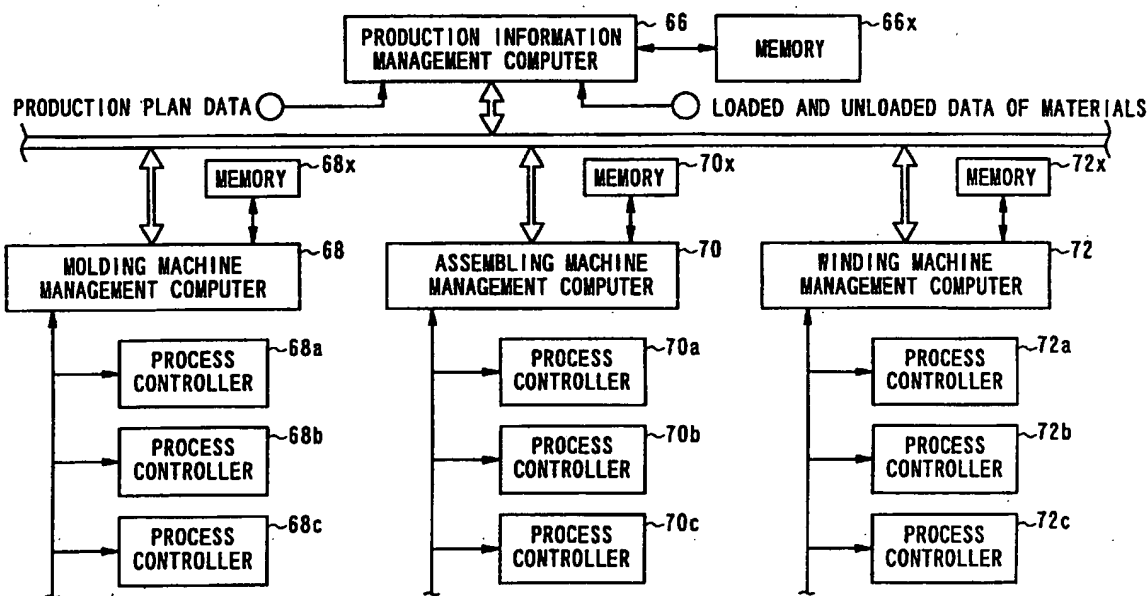
“To establish inherency, the evidence must make clear that the missing descriptive matter is ‘necessarily present’ in the material described in the reference, and that it would be so recognized by persons of ordinary skill in the pertinent art.” *Wesley Jessen Corp. v. Bausch & Lomb*, 209 F.Supp.2d 348, 392 (D. Del. 2002) citing *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268 (Fed. Cir. 1991); *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (noting that inherency cannot be established by probabilities or possibilities). “Although recognition of an element in the prior art before the critical date is not necessary, inherent anticipation still requires that the element necessarily be present.” *Schering Corp. v. Geneva Pharms.*, 339 F.3d 1373, 1377 (Fed. Cir. 2003).

Komiya fails to teach each and every limitation of claims 1, 2 and 6, either expressly or inherently. As provided on page 6 of the Specification and Figure 1, at least some if not all of the components, such as an article weight station 11, marking means (including, for example,

inkjet or thermal transfer printers), palletiser 30, and wrapper means 31, which are “connected to the data bus 10 may emanate from alternative manufactures, or even when the same manufacturer may be of different generations or otherwise may be incompatible from a control point of view.” The invention provides and recites in claim 1, a common computer protocol to be used by the control means, and the respective connecting means then translates the commands to the command protocol actually used by the connected components.

As asserted in Appellant's previous office action responses, the passages of Komiya at columns 4-6 and 9-12 and figure 1 (provided below), figures 2 and 19, merely describe how a controller controls various mechanisms and patterns and how computer 66 controls various process controllers.

FIG. 1



Komiya does not disclose or suggests a “respective connecting means” for each of a first, second, and third marking means and for a means for collecting the plurality of packs into a single packaged unit where each respective collecting means includes a “means to translate data bus commands appropriate to that component into, a command protocol which is read by the connected component which responds by performing a productive function, whereby the control

means is able to control each of the connected components independent of command protocols recognized by the connected components.” Therefore, for Komiya to anticipate claim 1, the recited feature must be inherently disclosed.

Rather than operating like the invention as recited in claim 1, the system of Komiya could (1) rely on equipment being replaced by equipment which operates according to the same protocol as the replaced equipment or (2) rely on reprogramming of the computer controller. Accordingly, the “respective connecting means” including the “means to translate” is not *necessarily present* in Komiya as required for anticipation by inherency under the Federal Circuit authority cited above and M.P.E.P. § 2112. Accordingly, Komiya fails to anticipate claim 1.

Moreover, Appellant provided supporting evidence that there is no inherent disclosure in Komiya of the claimed subject matter in the Rule 132 Declaration of Paul Mills, filed on June 1, 2004, and previously made of record in Appellant’s Reply mailed on May 27, 2004 (Mills Declaration).

In such an automated packaging system, it is typical that some if not all of the components, such as the first, second and third marking means, the packing means, the means to collect, may emanate from alternative manufacturers, or even when from the same manufacturer may be of different generations or otherwise may be incompatible from a control point of view. Each of the connected components requires the appropriate command protocols, which typically would be particular to a specific component, in order to perform a productive function such as “print” or “wrap.”

Mills Declaration, ¶4.

As provided in Mr. Mills’ statement, the “connecting means” and “means to translate” of claim 1 are not only not necessarily present, but rather, it is more likely that the Komiya system would be implemented differently. Inherency cannot be established by probability or possibilities, it must necessarily follow from what is actually disclosed. *See In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999). “The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *In re Oelrich*, 666 F.2d 578, 581 (CCPA 1981).

The Office Action mailed on January 29, 2004, states that the “respective connecting means” and the “means to translate” are inherently disclosed in Komiya.

[T]he connecting of a elements of a machine with a controller, such as connecting a printer or floppy drive to a computers CPU or connecting remote sensors and machine control circuits to a PLC, is inherent in structure and is necessary when any components are connected via a data bus to a controller. The same principle applied to a means for translating date bus commands: if this were not so, the above examples of a computer would not be able to communicate with or recognize the printer of floppy drive and the example of a machine with remote sensors and control circuits would not be able to communicate or receive instructions from the PLC.

Office Action, mailed January 29, 2004 at ¶5.

However, when the “means to translate data bus commands” limitation is afforded the broadest reasonable scope in view of the supporting specification and corresponding structure, material or acts described therein, the rejection based on Komiya should be withdrawn. In particular, the “means to translate data bus commands” limitation includes “whereby the control means is able to control each of the connected components independent of command protocols recognized by the connected components.” Nothing in Komiya discloses, teaches or suggested this feature. In prior art packaging systems, as disclosed in Komiya for example, loading differing components on a packaging system necessitates reprogramming the computer controller (such as, for example, loading new device drivers onto the computer for each new connected component). Moreover, Mr. Mill’s testimony from the paper filed on June 1, 2004, further supports that Komiya fails to disclose this feature.

There is no reason to assume that each component [of Komiya] has a “respective connecting means” with a means to translate the data bus commands to commands appropriate to the specific device. Instead, it is more likely to assume Komiya envisaged that if an item of equipment were to be replaced, it would be replaced by an item which operates according to the same protocol (as the one being replaced) or else, that the computer controller is reprogrammed (e.g., to use a new driver for the new component) to cope with such a new item of equipment.

Mills Declaration at ¶10.

For the foregoing reasons, it is respectfully submitted that the rejection of claim 1 based on Komiya should be reversed, and that claims 1, 2 and 6 should be allowed.

b. The subject matter of claims 3-5 and 7-13 would not have been obvious in view of Komiya

“It is well established that there must be some logical reason apparent from the evidence or record to justify combination or modification of references. In addition, even if all of the elements of claims are disclosed in various prior art references, the claimed invention taken as a whole cannot be said to be obvious without some reason given in the prior art why one of ordinary skill in the art would have been prompted to combine the teachings of the references to arrive at the claimed invention. Even if the cited references show the various elements suggested by the Examiner in order to support a conclusion that it would have been obvious to combine the cited references, the references must either expressly or impliedly suggest the claimed combination or the Examiner must present a convincing line of reasoning as to why one skilled in the art would have found the claimed invention obvious in light of the teachings of the references.” *Ex Parte Clapp*, 227 U.S.P.Q.2d 972, 973 (Board. Pat. App. & Inf. 985)(internal citations omitted).”

“The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification.” *In re Gordon*, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984).

Although the Commissioner suggests that [the structure in the primary prior art reference] could readily be modified to form the [claimed] structure, “[t]he mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification.” *In re Laskowski*, 10 U.S.P.Q. 2d 1397, 1398 (Fed. Cir. 1989).

“The claimed invention must be considered as a whole, and the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of

making the combination.” *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 U.S.P.Q. 481, 488 (Fed. Cir. 1984).

Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under Section 103, teachings of references can be combined only if there is some suggestion or incentive to do so. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984) (emphasis in original, footnotes omitted).

“The critical inquiry is whether ‘there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination.’” *Fromson v. Advance Offset Plate, Inc.*, 225 U.S.P.Q. 26, 31 (Fed. Cir. 1985).

“In appropriate circumstances, a *single* prior art reference can render a claim obvious. However, there must be a showing of a suggestion or motivation to modify the teachings of that reference to the claimed invention in order to support the obviousness conclusion. This suggestion or motivation may be derived from the prior art reference itself, , from the knowledge of one of ordinary skill in the art, or from the nature of the problem to be solved. Determining whether there is a suggestion or motivation to modify a prior art reference is one aspect of determining the scope and content of the prior art, a fact question subsidiary to the ultimate conclusion of obviousness.” *SIBIA Neurosciences, Inc. v. Cadus Pharmaceutical Corp.*, 225 F.3d 1349, 1356 (Fed. Cir. 2000) (internal citations omitted and emphasis added).

Appellant respectfully disagree with the Examiner’s conclusion that, to one of ordinary skill in the art, the subject matter of claims 3-5 and 7-13 would have been obvious in view of Komiya. Nowhere does Komiya suggest “respective connecting means” and the “means to translate” limitations as recited in claim 1, from which claims 3-5 and 7-13 depend. The Examiner's reasoning appears to suggest no more than that it is necessary that a computer can issue command signals to connected peripherals, which indisputable. As has been explained above, the practice in packaging systems prior to the present invention, has been to configure the control computer to issue commands to the data bus using appropriate protocols for the items of equipment, the components (or “peripherals”) being connected to the data bus. In contrast, the claimed subject matter features packaging system components that are each connected to the data

bus by a connecting means which has the facility to translate command signals of one (common) protocol to command signals of a protocol specific to the component. There is nothing in Komiya that would lead one of ordinary skill, interested in improving Komiya, to produce the claimed packaging system.

Accordingly, for the foregoing reasons and those noted above with respect to the rejection of claim 1, it is respectfully submitted that the rejection of dependent claims 3-5 and 7-13 based on Komiya should be reversed and the claims allowed.

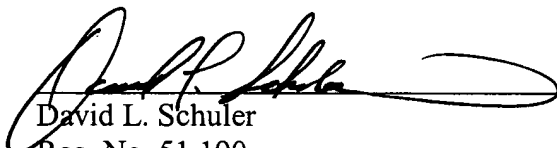
c. Conclusion

For the foregoing reasons, Appellant requests that that Examiner's rejections on the basis of 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a) be reversed and submits that all claims area be allowed. In accordance with Appellant's Notice of Appeal filed February 9, 2005, Appellants submits this Appeal Brief in triplicate, the brief fee of \$500, and a \$2,160 check for the Petition for Extension of Time fee. Please apply any other charges or credits to deposit account 06-1050, referencing the attorney docket number above.

Respectfully submitted,

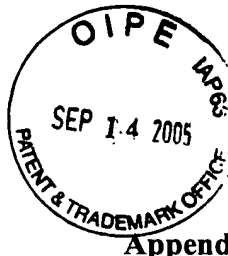
Date: _____

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Appendix of Claims

1. A packaging system for packaging a plurality of individual articles into packs and for collecting together a plurality of packs into a packaged unit, the system including
a first part where the individual articles are marked utilising a first marking means,
a second part where the packs are marked utilising a second marking means, and
a third part where the packaged unit is marked utilising a third marking means, and
the first part including packing means for packing the articles into packs and first conveying means for moving the packs from the first part to the second part, and

the second part including second conveying means for conveying the packs from the second to the third system part, and

the third part including means to collect the plurality of packs into a packaging unit, wherein each of the first, second and third marking means, and the means for collecting the plurality of packs into a packaged unit are connected to a data bus by respective connecting means,

there being a control means also connected to the data bus, the control means sending appropriately addressed data bus commands on the data bus to each of the connected components, the data bus commands all using a common computer protocol, and each of the connecting means of the connected components including means to translate data bus commands appropriate to that component into, a command protocol which is read by the connected component which responds by performing a productive function, whereby the control means is able to control each of the connected components independent of command protocols recognised by the connected components.

2. A system according to claim 1 wherein at least one of the first and second conveying means is also connected to the data bus via connecting means which translate appropriately addressed data bus commands into command protocols to operate the conveyor(s).

3. A system according to claim 1 or claim 2 wherein each of the first, second and third marking means includes respectively at least one of a continuous ink jet printer, a laser printer, a thermal transfer printer and a label printer.

4. A system according to claim 1 wherein the first part of the packaging system includes means to weigh the articles so that information marked on the individual articles by the first marking means is dependent upon the weight analysis.

5. A system according to claim 1 wherein the first part of the packaging system includes means to size the articles so that information marked on the individual articles by the first marking means is dependent upon the size analysis.

6. A system according to claim 1 wherein the first part of the packaging system includes means to count elements so that information marked on the individual articles by the first marking means is dependent upon the count analysis.

7. A system according to claim 1 wherein the third part means to collect the plurality of packs into a packaging unit includes a palletiser whereby the packaged unit is a collection of packs on a pallet.

8. A system according to claim 7 wherein the palletiser includes means to wrap the collected articles in a wrapping and means apply labels printed by the third marking means to the wrapping.

9. A system according to claim 1 wherein the data bus is provided by connection cable so that the connected components are all physically connected together.

10. A system according to claim 9 wherein the data bus includes an RS485 or RS422 or Ethernet standard cable.

11. A system according to claim 1 wherein the data bus is virtual, with each of the connected components receiving transmitted data bus commands and being adapted to respond to and translate data bus commands appropriate to that component into command protocols.

12. A system according to claim 1 wherein the control means issues data bus commands in-one of HTTP, TPC/IP, IPX, FCP protocol.

13. A system according to claim 1 wherein the control means includes a database of connected components so that command protocols appropriate to the functionality of the connected components are issued.